

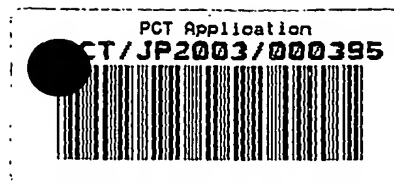
Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference T708.QHOIL-1	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP2003/000395	International filing date (day/month/year) 20 January 2003 (20.01.2003)	Priority date (day/month/year) 18 January 2002 (18.01.2002)
International Patent Classification (IPC) or national classification and IPC A23D 9/00, A23L 1/30, C11B 5/00, C09K 15/04		
Applicant KANEKA CORPORATION		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 25 June 2003 (25.06.2003)	Date of completion of this report 25 December 2003 (25.12.2003)
Name and mailing address of the IPEA/IP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International Application No.

PCT/JP2003/000395

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☐ the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the claims:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement under Article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International Application No.

PCT/J 03/00395

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-16	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-16	NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims		NO

## 2. Citations and explanations

Document 1: EP 424679 A2 (Societe des Produits Nestle S. A.), 27 September 1990, refer to the entire document, & JP 3-167293 A & US 5258179 A & DE 69024321 A & CA 2027677 A

Document 2: C. WEBER et al., "Antioxidative Effect of Dietary Coenzyme Q<sub>10</sub> in Human Blood Plasma," Vitamin and Nutrition Research, 1994, Vol. 64 (4), pages 311-315, refer to the entire document

Document 3: EP 803201 A2 (CPC International Inc.), 29 October 1997, refer to the entire document, & JP 10-45614 A

Document 4: WO 96/38047 A1 (Unilever N. V.), 05 December 1996, refer to the claims, the examples and the like, & US 6441050 A & AU 200183426 A

Document 1 discloses the feature of mixing a coenzyme Q with a fatty substance or a food product, a cosmetic or a pharmaceutical preparation that contains a fatty substance in order to inhibit the oxidation of the fatty substance or the food products, cosmetics and pharmaceutical preparations, and specifically discloses the feature of producing a sample material wherein ubiquinone CoQ<sub>10</sub> has been added to a fat. Likewise,

document 1 discloses a feature wherein the amount of the coenzyme is between 0.1 and 5.0% on the basis of the weight of the fatty substance, a feature wherein an oxidation inhibitor such as ascorbic acid is also added and a feature wherein coenzyme Q is added to a fat, heated to a temperature of approximately 60°C and stirred in order to inhibit the oxidation of the fat.

Document 2 indicates that both coenzyme Q10 and the reduced form of coenzyme Q10 act as anti-oxidizing agents.

Document 3 discloses a feature wherein corn germ oil that has been enriched with ubiquinone 9/10 or compounds comprising a food base or a carrier that has been added to the corn germ oil are used as dietetic foods or pharmaceutical preparations that exhibit a blood coagulation-inhibiting action, and discloses a method wherein corn germ oil that has been enriched with ubiquinone 9/10 is administered orally in order to inhibit blood coagulation. Document 3 also discloses examples using corn oil (A), which comprises 264ppm of ubiquinone Q9 and 7ppm of ubiquinone Q10, and corn oil (B), which comprises 306ppm of ubiquinone Q9 and 8ppm of ubiquinone Q10.

Document 4 discloses the feature of adding tocotrienol or the like to fat-based food products, and discloses spreads, cheeses, shortenings, cooking oils, frying oils and the like as the fat-based food products.

The feature of inhibiting oxidation by adding ubiquinone CoQ10, which is one type of coenzyme Q, to fat-containing food products was well known prior to the priority date of this application as disclosed in document 1, and the feature wherein the reduced form of coenzyme Q10, which is to say ubiquinol, also has an anti-oxidizing action like that of coenzyme Q10 was well known prior to the priority date of this application as indicated in document 2, therefore it would be easy for a person

skilled in the art to conceive of the feature of adding ubiquinol in order to inhibit the oxidation of food products that contain fats and oils. Likewise, it would be easy for a person skilled in the art to enhance the anti-oxidizing action by further adding ubiquinone.

In addition, oils that have been enriched with ubiquinone or food products that contain said oils can be used as health food products as disclosed in document 3; therefore, it would be possible for a person skilled in the art to predict that ubiquinol-enriched oils or food products that contain said oils have a health-promoting effect.

Furthermore, the addition of an anti-oxidizing substance or an edible pigment, and the selection of fat-containing food products such as dairy products or oils and fats that are used in foods can be configured by a person skilled in the art as necessary, as disclosed in documents 1 and 4.

Therefore, it is considered to be easy for a person skilled in the art to conceive of the inventions set forth in claims 1-16 in the light of documents 1 and 4.